ABSTRACT

A method and system for imaging of a scattering target medium using a modified perturbation formulation of a radiation transport equation where normalized measured values are used to recover a relative difference in absorption and/or scattering properties based on the normalized measured values with respect to a reference medium. The modified perturbation formulation provides enhanced stability, reduces the sensitivity of solution to variations between the target and reference media, produces solutions having physical units and reduces the need for absolute detector calibration. Moreover, the modified perturbation equation lends itself to the detection and imaging of dynamic properties of the scattering medium.

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